U.S. Environmental Protection Agency's PM Supersites Program—A Major Successful Collaborative Air Quality Program Supporting States and Regional Organizations in Their Approaches to Reduce PM Levels in Air on Urban and Regional Scales

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The U.S. Environmental Protection Agency's (U.S. EPA) Particulate Matter (PM) Supersites Program (Program) is a nationwide air quality methods, measurement, modeling, and data analysis program initiated through cooperative agreements with leading universities. The Program provides state-of-the-science information to support 1) the development of emission reduction strategies designed into State Implementation Plans (SIPs) by improving our understanding of PM2.5 accumulation on urban and regional scales and relationships between sources and receptors, 2) human exposure and health effects research, and 3) development and testing of measurement methods for possible transition to national PM monitoring networks. Eight Supersites Projects were established in major cities across the U.S. covering areas of most concern with regards to PM pollution.

Several aspects of the Program include extensive partnering. The cooperative agreements initially coordinated efforts with other major air quality programs in their respective areas. It became evident that significant benefits would result by coordinating into a unified program [Eastern Supersites Program (ESP)] the measurements of other air quality studies in the eastern half of the US with the Supersites Projects. This effort became fully integrated with other local, state, and federal agencies; multi-state and Regional Planning Organizations; and private sector organizations. Coordination was especially successful and the program grew from the one month initial intensive to three intensive monitoring periods over 13 months, beginning July 2001. An important outcome of ESP was development of the Supersites Integrated Relational Database, which includes virtually all air quality and meteorological data collected in the continental U.S. during the 13-month period. This database has been and will be extremely useful to modelers and data analysts for understanding the fate and transport of PM on regional and sub-continental scales and for model evaluation and application in support of SIP development. The U.S. EPA also initiated development of an integrated synthesis of key and policy relevant findings from the Supersites Program and Related Studies (Synthesis). The technical aspects of the Synthesis are based on 17 science/policy relevant questions developed by ORD in conjunction with key stakeholders. These questions are believed to be of the highest importance to supporting SIPs.

The program is already impacting PM2.5 SIP development in states or regions where the Supersites Projects exist and beyond. Program PIs are sharing data with many key stakeholders, providing important interpretations of data, and helping states model their respective areas. The U.S. EPA is using the database to study PM nationally and is better prepared to evaluate models on national scales.